

**METHODS OF SELECTIVELY BUMPING AN INTEGRATED CIRCUIT  
SUBSTRATE AND RELATED STRUCTURES**

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**ABSTRACT**

Bumping a substrate having a metal layer thereon may include forming  
a barrier layer on the substrate including the metal layer and forming a  
conductive bump on the barrier layer. Moreover, the barrier layer may be  
10 between the conductive bump and the substrate, and the conductive bump  
may be laterally offset from the metal layer. After forming the conductive  
bump, the barrier layer may be removed from the metal layer thereby  
exposing the metal layer while maintaining a portion of the barrier layer  
between the conductive bump and the substrate. Related structures are also  
15 discussed.